



NAUTICAL CHART MANUAL - VOLUME 1 - POLICIES AND PROCEDURES
Seventh (1992) Edition

**CHAPTER 7 - OTHER CHARTING
INFORMATION**

**U.S. Department of Commerce
Office of Coast Survey**



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Coast Survey
Silver Spring, Maryland 20910-3282

JULY 21, 2000

MEMORANDUM FOR: All Cartographers
Marine Chart Division

FROM: Fannie B. Powers
Chief, Quality Assurance, Plans and Standards Branch

SUBJECT: Chapter 7

Effective immediately, the attachment replaces Chapter 7 in the Nautical Chart Manual, Volume 1, Part 2, Seventh (1992) Edition in its entirety.

Chapter 7 is revised as follows:

1. Carto Orders and Memorandums are embedded in the text.
2. Acronyms are revised.
3. Pages are renumbered.

References to Chapter 7 in places, such as the Table of Contents and the Index in the Nautical Chart Manual, will be updated.

Attachment



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Coast Survey
Silver Spring, Maryland 20910-3282

JUNE 28, 2002

MEMORANDUM FOR: All Cartographers
Marine Chart Division

FROM: Fannie B. Powers
Chief, Quality Assurance, Plans and Standards Branch

SUBJECT: Nautical Chart Manual: Correction Pages - Pages 7-1 through 7-4

Effective immediately, the following attachment replaces pages 7-1 through 7-4 in the Nautical Chart Manual, Volume 1, Part 2, Seventh (1992) Edition.

The attachment serves to correct the following illegible items introduced to the Nautical Chart Manual during its conversion to digital format:

Nautical Chart Manual Volume	Nautical Chart Manual Page	Illegible Item Introduced during Digital Conversion
1	7-1	Figure 7-1: Tide Box Example
	7-2	Figure 7-2: Lake Diagram Example

Pages 7-1 through 7-4 are to be inserted into the Nautical Chart Manual, Volume 1, Part 2, Seventh (1992) Edition immediately before page 7-5.

Attachment

**NATIONAL OCEAN SERVICE
Office of Coast Survey
Marine Chart Division**

CARTOGRAPHIC ORDER 015/03

July 14, 2003

FILE WITH NAUTICAL CHART MANUAL, VOLUME 1, PART 2, SECTION 7.1

TO: All Cartographers
Marine Chart Division

SUBJECT: Tide Notes

APPLICATION: All Applicable Nautical Charts

Effective immediately, the attachment shall replace pages 7-1 and 7-2 in the Nautical Chart Manual, Volume 1, Part 2, Seventh (1992) Edition, Section 7.1, Tides.

The Center for Operational Oceanographic Products and Services (COOPS) will no longer provide old data from tide stations, not in use, to update chart Tidal Information Notes. Where there is no active tide station in the area of the chart as reported from COOPS, the Tidal Information Note shall be replaced with a note disclosing that no tidal observations are available.

This cartographic order incorporates all pertinent information from the Desk Reference Guide, Volume III, Unit Code 1790, Tides.

Attachment

Alexandra B. Heliotis
Acting Chief, Marine Chart Division

NAUTICAL CHART MANUAL

7 OTHER CHARTING INFORMATION

7.1 Tides

Definition: **TIDE** is the periodic rise and fall of the water resulting from gravitational interactions between the sun, moon and earth. Tide is the vertical component of the particulate motion of a tidal wave. Although the accompanying horizontal movement of the water is part of the same phenomenon, it is preferable to designate this motion as tidal current. [\[1\]](#)

7.1.1 Coastal Charts

General Requirements

In coastal navigation in an area where the tidal range is appreciable, it is useful to know the approximate height of water above or below chart datum which may be expected at high and at low tide. This information, which does not normally change from year to year, shall be shown as a tide note on all charts of a scale larger than 1:200,000 (see Figure 7-1). Selected Tide Table information is printed on Small-Craft Charts to aid mariners who may not be equipped with Tide Tables (see [Section 7.5, Small-Craft Information](#)).

TIDAL INFORMATION				
Place	Height referred to datum of soundings (MLLW)			
Name (LAT/LONG)	Mean Higher High Water	Mean High Water	Mean Low Water	Extreme Low Water
	feet	feet	feet	feet
Bellingham (48° 45'N / 122° 30'W)	8.4	7.7	2.5	- 4.5
Eagle Harbor (48° 35'N / 122° 42'W)	8.2	7.4	2.4	- 4.5
Point Migley (48° 45'N / 122° 43'W)	8.6	7.8	2.6	- 4.5

(Jan 2003)

Figure 7-1

When requested by Nautical Data Branch (NDB), tidal information is furnished by the Center for Operational Oceanographic Products and Services (COOPS). This would include observed tides in the vicinity of reported dangers considered critical to navigation. Tide information for Canadian waters should be obtained from Canadian Nautical Charts.

Values given in the tide note of a chart are referred to the plane of reference of the soundings on that chart. Thus, the value stated under [Mean High Water](#) is the mean of all high waters observed at the

REVISED JULY 14, 2003

station named. The value stated under [Extreme Low Water](#) is the lowest tide observed during the period in which tidal observations were made. This may be a period of a few days or many years. In addition, some extremes are inferred from the extremes at a control tide station nearby.

Charts of rivers where the tidal influence is diminished shall chart tidal information with a narrative note. The notes shall be updated on the same cycle as the tide note tabulation. Charts of rivers not subject to tidal influence may be charted with a profile graph and explanatory note.

Feature Recommendation for Notice to Mariners

A newly applied, revised, or a deleted tide note shall be evaluated for a Notice to Mariners.

Location and Orientation

The tide note on Conventional Nautical Charts shall be charted in the title block area.

Size and Shape

Tide notes on Conventional Nautical Charts shall be fixed in format but variable in size to accommodate the necessary information.

Labels and Notes

The note shall be charted with 7 pt. Swiss Light. The tide note shall be portrayed on Conventional Charts with a tabulated listing of the tide range for selected locations on the chart.

The approximate geographic position shall be charted for each tidal place not easily located on the chart.

The date of the tide note shall be the date on which the latest information was obtained from the COOPS. Chart tidal information values should be checked for approximately every three years. The date shall be shown in the lower left corner of the note, giving the abbreviation of the month and the year in parentheses. Thus:

(Jan 2003)

(The remainder of this page is intentionally blank.)

When the tide note is more than 3 years old and no update is available, revise date information to, i.e.,

(Jan 2000) Latest available information

Tide notes for metric charts shall be charted with meters.

Charts of rivers where the tidal influence is diminished shall chart tidal information with a narrative note. Example:

TIDES
The diurnal range of the tide at Vancouver
(45°37'N/122°40'W) during low river stages is 1.8 feet.
The range becomes progressively smaller with higher
stages of the river.

April 2001

Charts of rivers not subject to tidal influence may be charted with a profile graph and explanatory note.

Color and Screening

Tide notes on Conventional Nautical Charts shall be charted with black.

Feature Removal from Chart

Where there is no active tide station in the area of the chart as reported from COOPS, the tabular Tidal Information Note shall be removed from the chart and replaced by the following note.

TIDAL INFORMATION

No tidal observations are available for the area
covered by this chart.

Chart tidal information values should be checked for every new chart edition in order to replace this note.

(The remainder of this page is intentionally blank.)

7.1.2 Great Lakes Charts

In the Great Lakes, where the monthly fluctuation of the water level is discernible, a hydrograph (Figure 7-2) is charted. The hydrograph shows average and extreme water levels. The curve depicting average water level is based on a 10-year average. The extreme water level shows the highest and lowest monthly mean stages for the entire period of record (from 1900 to the present).

A separate hydrograph is furnished for all metric charts of the Great Lakes and the reference to elevations is shown in meters.

The [Low Water Datum](#) (LWD), which is the plane of reference for the levels shown on the hydrograph, is also the plane of reference for the charted depths. If the lake level is above or below LWD, the existing depths will be correspondingly greater or lesser than the charted depths.

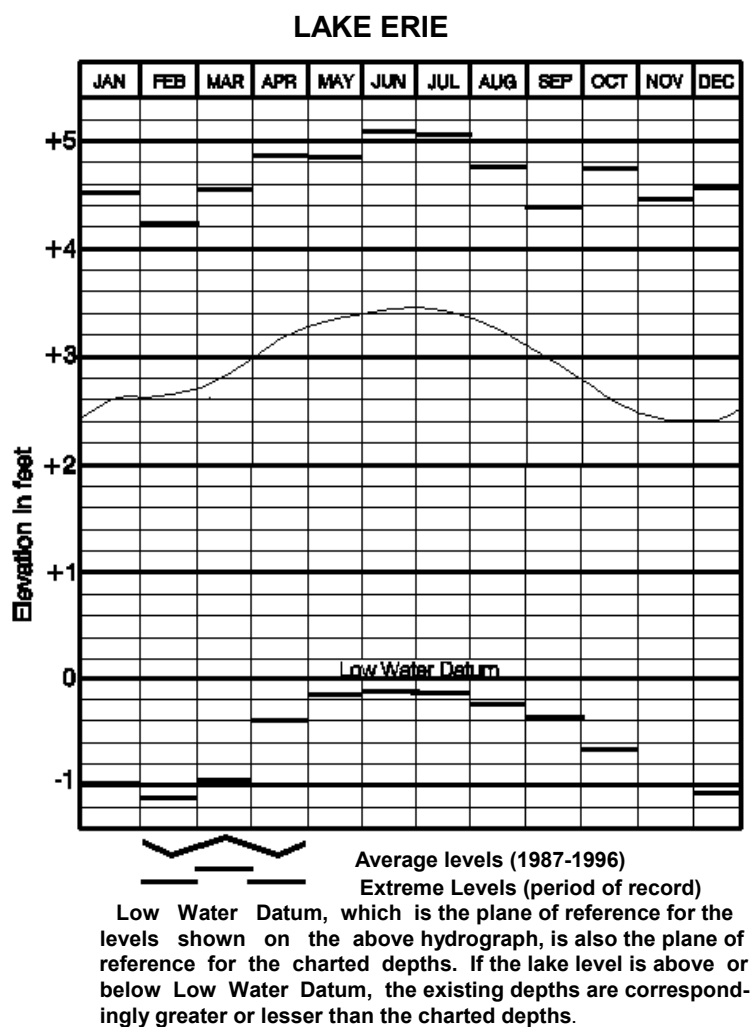


Figure 7-2

**NATIONAL OCEAN SERVICE
Office of Coast Survey
Marine Chart Division**

CARTOGRAPHIC ORDER 005/03

MARCH 31, 2003

FILE WITH NAUTICAL CHART MANUAL, VOLUME 1, PART 1, SECTION 7.3

TO: All Cartographers
Marine Chart Division

SUBJECT: Magnetism

APPLICATION: All Nautical Charts

Effective immediately, the attachment shall replace pages 7-3 through 7-10 in the Nautical Chart Manual, Volume 1, Part 1, Seventh (1992) Edition, Section 7.3, Magnetism.

Magnetic specifications added from the Desk Reference Guide, Volume III, Unit Code 1850. Compass roses shall be portrayed on all charts and insets except where space is limited, otherwise, a north arrow shall be charted.

All documentation contained in the Desk Reference Guide, Volume III, Unit Code 1850, concerning Magnetism is superseded.

Attachment

Nicholas E. Perugini
Captain, NOAA
Chief, Marine Chart Division

When requested by NDB, a 10-year lake-level tabulation is furnished by the Center for Operational Oceanographic Products and Services. A revised tabulation should be available each February. The cartographer compiles the hydrograph from the lake-level tabulation. This hydrograph should be updated for each [New Edition](#) of the chart.

7.2 Currents

Currents and their peculiarities often make narrow waterways extremely hazardous for the mariner. Numerous ocean inlets are difficult and dangerous to navigate when certain combinations of current and onshore surf conditions exist. In many narrow bodies of water, the maximum current velocities are so great that passage is impossible for vessels of limited power and is substantially slowed for most others. In addition, adverse currents can make it difficult for a vessel to maintain steerage in areas where known dangers exist. Thus sufficient warning of such currents must be given to allow mariners to adequately prepare and plan for safe transit. Areas where currents exist that are considered dangerous to navigation during certain stages of tide should be emphasized with a note describing the unsafe conditions. The note should be placed in the vicinity of the hazardous conditions.

Where currents of particular importance to navigation are found to exist during survey operations, they are noted on the [survey sheet](#) or in the [DR](#). Such notes may indicate areas where submerged [obstructions](#) exist and where clear chart notation can give mariners advance warning of such dangers.

The following current characteristics shall be transferred to the chart with as little displacement of position from the source as possible:

Eddies ([H 45](#))

Eddies are circular movements of water that are formed between two adjacent currents flowing counter to each other or where currents pass over or around obstructions, especially on the downstream side. Eddies are charted with symbols H 45. A label is not recommended.

Strong Currents ([H 40](#), [H 41](#), [H m](#))

Strong currents are produced by the movement of water in a horizontal direction and may be narrow, deep, and fast-moving. They usually gain their unusual velocity and depth from constriction of the waterway. Currents may be indicated with a note, a label, or symbols [H 40](#), [H 41](#), or [H m](#).

Swirls

Swirls are circular movements of water formed where currents pass over obstructions. Swirls may be charted with a label.

Tide Rips ([H 44](#))

Tide rips are waves formed on the water surface by the meeting of opposing tidal currents, or by a tidal current crossing an irregular bottom. Tide rips are charted with symbol H 44. A label is not recommended.

7.3 Magnetics

Magnetic information is charted to provide mariners with the values necessary to make compass adjustments in order to plot true courses. The location of ‘magnetic north’ and ‘true north’ are not the same. Some means of reference between magnetic north and true north is needed on the charts (particularly for smaller scales). The magnetic values are charted with compass roses or isogonic lines. A North arrow symbol is used in some cases. An explanatory note is used in areas where local magnetic disturbances occur.

7.3.1 Compass Roses

Definition: A **COMPASS ROSE** is a circle graduated in degrees clockwise from 0° (north) to 360° printed on a chart for use as a protractor. Compass roses are placed at convenient locations to facilitate measurements of directions. They may be oriented to the true or the magnetic north.

General Requirements

A sufficient number of compass roses (see [Figure 7-3](#)) are placed on charts to help mariners plot bearings and lay out courses. They show the magnetic variation (or declination) for the charted area as of a specified date and state the annual increase or decrease which mariners must adjust for. This is necessary because magnetic declination is changing constantly due to the fluctuations of the Earth's magnetic fields. The compass roses used on NOS Charts consist of an outer circle in degrees, with zero at true north, and an inner circle in points and degrees with the arrow indicating magnetic north.

Compass roses shall be charted on all charts and insets. Where space is limited, a north arrow pointing to true north may be substituted.

In general, on charts showing isogonic lines (see [Section 7.3.3](#)), the compass rose consists of a compass circle with zero at true north and a center arrow oriented in accordance with the direction and amount of variation (see [Figure 7-4](#)). However, on charts 13200 and 13260, the full compass rose is shown (see [Figure 7-3](#).) On International Charts and metric charts 14800 and 14820 only the outer rose is shown (see [Figure 7-5](#)).

The information concerning magnetic variation which appears on a compass rose shall be updated for each new edition of the chart. Data for generating compass roses are maintained and furnished



UNITED STATES DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

NATIONAL OCEAN SERVICE

Office of Coast Survey

Silver Spring, Maryland 20910-3282

NOVEMBER 25, 2003

MEMORANDUM FOR: All Cartographers
Marine Chart Division

FROM: Fannie B. Powers
Chief, Quality Assurance, Plans and Standards Branch

SUBJECT: Compass Roses

REFERENCE: Nautical Chart Manual, Volume 1, Part 2, Section 7.3.1

Effective immediately, assure that projection lines are charted through compass roses on any New Edition, New Chart, or Reconstructed Chart.

to NOS by the National Geophysical Data Center (NGDC) of the National Environmental Satellite, Data, and Information Service, Boulder, Colorado. This information is generated using the PLACE ROSE computer program. The World Magnetic Model (WMM) is to be used for updating compass rose information for all NOS Charts. The current model is for the 2000 Epoch (WMM-2000). The model is updated every 5 years. Cartographers should also note that when the magnetic model changes there may be unforeseen changes in both the variation and annual change. These changes should be reported to QAPSG.

Magnetic variations derived for a given year should be calculated to be January 1 of that year. They should be entered into the Model as year 3 (e.g., 2003).

Magnetic variations shown in the center of the rose shall be rounded to the nearest 15 minute interval. Annual change shown in the center of the rose shall be rounded to the nearest whole minute. If the new variation is larger than the previous one, the annual change is an increase regardless of direction. Conversely, if the new variation is smaller than the previous one, the annual change is a decrease.

Cartographers should be alert for areas where the variation has gone through 0. In these cases the change will go from a decrease to an increase.

Feature Recommendation for a Notice to Mariners

A newly applied, revised, or deleted compass rose shall be evaluated for a [Notice to Mariners](#).

Location and Orientation on Chart

Compass roses cannot be placed in final position until the amount of rotation of the inner rose is known.

Compass roses should be positioned on a chart so as to be convenient to the most important navigational areas, and at such intervals that all water areas are within the reach of a parallel ruler. In some cases it will be necessary to remove topographic features when compass roses are placed on land areas. In no case should compass roses cover or even be placed close to any danger in the water area. Nor should they be placed at the entrance to a harbor. When placed in a water area, every effort must be made to assure that the rose's graduations and numbers do not fall on soundings or bottom characteristics; if necessary, a new selection of soundings should be made or move the rose. This applies to all charts. Compass roses can be repositioned at the discretion of the cartographer.

Projection lines shall be charted through compass roses. Projection intersections shall not be removed since they are used for plotting reference and control of various chart information.

Section 7.3.1

NAUTICAL CHART MANUAL

Care must be taken not to place a compass rose on a projection intersection; this will assure that a compass rose construction line is not mistaken for a projection line. If a compass rose must be positioned on a projection line, as on Great Lakes charts with polyconic projections, the cartographer should attempt to align the compass rose on a meridian rather than a parallel.

There shall be one compass rose for each down fold of a small-craft nautical chart. They shall not be charted on the up or down folds.

Size and Shape

Compass roses shall be charted according to the standard cartographic symbols in Chart No. 1 (B [70](#)) with one of the following diameters according to the space available: 2, 2-1/2, 3, 3-1/2, 4, 5". The largest diameter rose possible shall be used. Compass roses without the inner circle shall be charted with a 5" diameter outer circle.

Labels and Notes

The magnetic variation and annual change shall be charted on the inner rose with magenta 7 pt. Swiss Light on 5" roses. Magenta 5 pt. Swiss Light shall be used for inner roses less than 5". All letters shall be capitalized.

The magnetic variation shall be charted in degrees and minutes followed by the letter E or W (east or west as appropriate) immediately followed by the year of the computation in a parenthesis. An increase or decrease in the annual change shall be expressed in minutes. See [Figures 7-3](#) and [7-4](#) for examples.

When the magnetic variation rounds to 0°00', the text, **NO VARIATION**, immediately followed by the year of the computation in a parenthesis shall be charted. When the annual change rounds to 0°00', the text, **NO ANNUAL CHANGE** shall be used. Where there is no variation the annual change shall be given as so many minutes E or W.

Color and Screening

Compass roses shall be charted with magenta on all new charts and all new editions.

Feature Removal from Chart

Compass roses shall not be removed from the chart without authorization by the Chief of Marine Chart Division.

REVISED MARCH 31, 2003

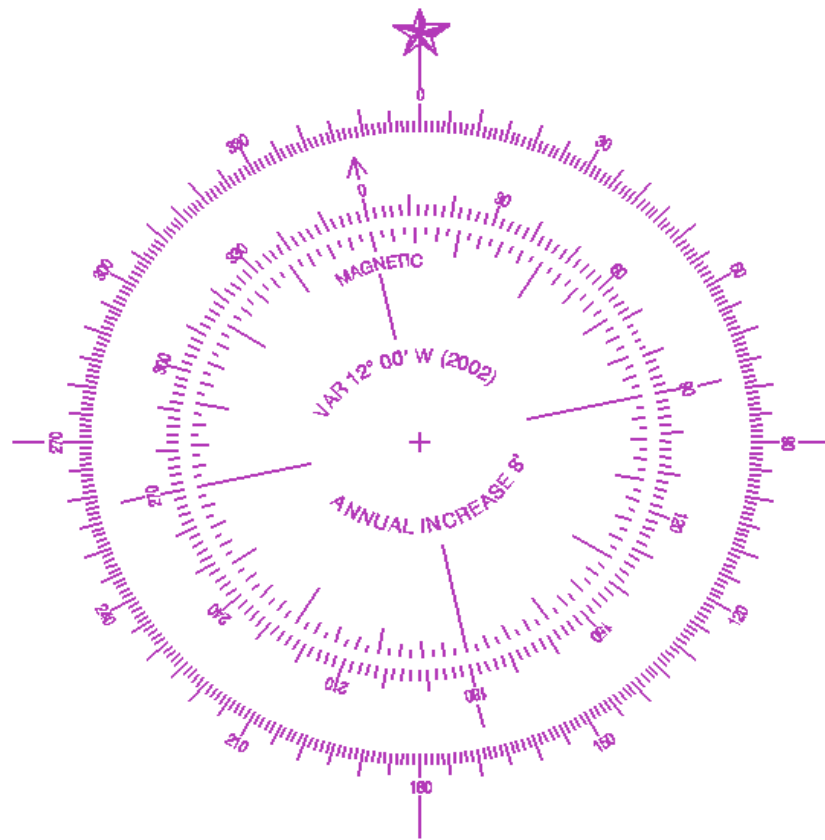


Figure 7-3

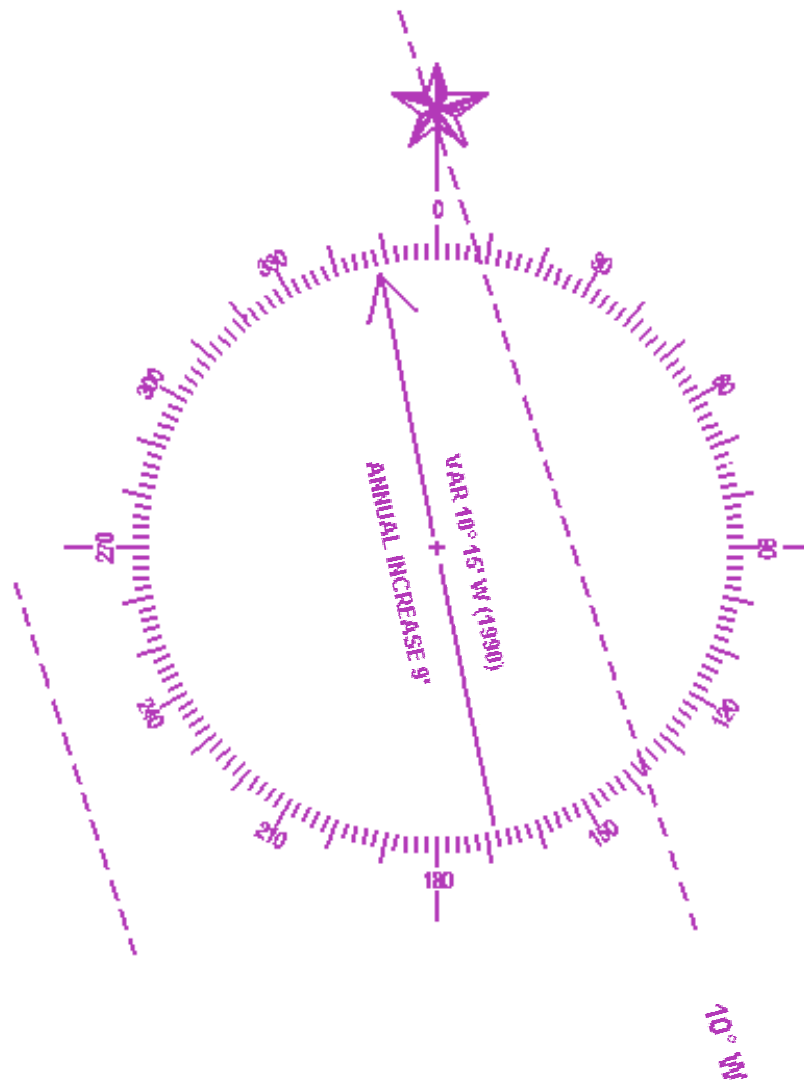


Figure 7-4

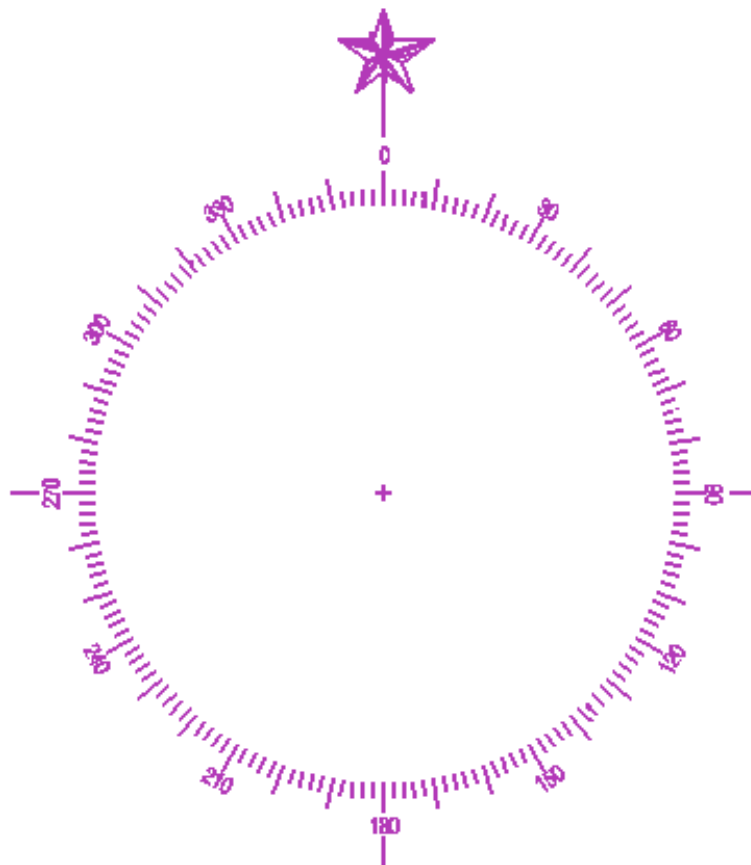


Figure 7-5

7.3.2 Local Magnetic Disturbance Notes

Definition: **LOCAL MAGNETIC DISTURBANCE** is an anomaly of the magnetic field of the earth, extending over a relatively small area, due to magnetic influences. It is also called local attraction, or magnetic anomaly.

General Requirements

Local magnetic disturbance, which causes noticeable deflections of the compass, is a fairly common occurrence in shallow water and near mountain masses. Notes shall be placed on charts to call attention to local magnetic disturbance. These notes should be based on information furnished by the NOS Hydrographic Field Party or by the National Geophysical Data Center (NGDC) of the National Environmental Satellite, Data, and Information Service, in Boulder, Colorado. The NGDC should be notified of information on magnetic anomalies that originates outside NOS.

Feature Recommendation for a Notice to Mariners

Newly applied, revised, or deleted local magnetic disturbances shall be evaluated for a [Notice to Mariners](#).

Location and Orientation on Chart

Local magnetic disturbance notes shall be charted where deviations of 2° or more from the normal value of magnetic declination exist (3° more in Alaska).

Labels and Notes

All notes concerning local magnetic disturbances shall be charted with 7 pt. Swiss Light, set either 2" or 3- 1/2" wide.

Examples of notes follow:

LOCAL MAGNETIC DISTURBANCE

Differences from normal variation of as much as 5° have been observed in Gastineau Channel in the vicinity of Lat. 58°15'.

LOCAL MAGNETIC DISTURBANCE

Differences of 12° or more from normal variation may be expected in X Channel in the vicinity of Z Point.

When limited by space, the full note should be placed elsewhere on the chart and the following reference note shown (in magenta) in the area of the disturbance:

LOCAL MAGNETIC DISTURBANCE
(see note)

Color and Screening

All notes concerning local magnetic disturbances shall be charted with magenta.

Feature Removal from Chart

Notes concerning local magnetic disturbances shall not be removed until an established authority provides conclusive evidence that a magnetic disturbance no longer exists in the charted position.

7.3.3 Isogonic Lines

Definition: An **ISOGONIC LINE** is a line connecting points of equal magnetic variation.

General Requirements

Variations (declinations) may be shown by isogonic lines on smaller-scale charts. The line passing through points having zero variation is called the "agonic line."

Isogonic lines pass through all points where the magnetic needle is deflected from the geographic meridian by the same amount. Isogonic lines shall be shown on those charts on which a variation of 1° will, in general, result in a distance between the lines of less than 12 inches. Each line shall not be broken except for topographic features.

This information shall be updated for each new edition of the chart. Data for generating isogonic lines are maintained and furnished to NOS by the National Geophysical Data Center (NGDC) of the National Environmental Satellite, Data, and Information Service, in Boulder, Colorado. It is generated using the ISOGONIC2 computer program and is based on the WMM.

Isogonic lines shall not be charted on Small-Craft Nautical Charts.

Feature Recommendation for a Notice to Mariners

Newly applied, revised, or deleted isogonic lines shall be evaluated for a [Notice to Mariners](#).

Location and Orientation on the Chart

Isogonic lines shall be charted inside the charts neatline and seaward of the shoreline.

Line Type and Weight

Isogonic lines on International Charts shall be charted with a solid line: 0.20 mm (0.008").

Isogonic lines on other charts shall be charted with a dashed line: 0.2/2.0/0.75 mm (0.008/0.080/0.030").

Labels and Notes

All notes concerning isogonic lines shall be charted with magenta 7 pt. Swiss Light, set either 2" or 3-1/2" wide.

Charts with isogonic lines shall carry the following magenta note near the title box stating the name of the model used and the year the model was computed. Because the position of the charted isogonic lines will vary to reflect annual variations, also include the year in which the lines were computed.

MAGNETIC VARIATION

Magnetic variation curves are for 2003 derived from 2000 World Magnetic Model and accompanying secular change. If annual change is in same direction as variation it is additive and the variation is increasing. If annual change is opposite in direction to variation it is subtractive and the variation is decreasing.

Isogonic lines shall be labeled with the amount and direction of variation in magenta 8 pt. Swiss Regular. On every fifth line, the amount and direction of variation shall be shown along with the date. In such cases, the compass rose shall consist of the outer rose oriented to true north with a center arrow aligned to the variation value. See [Figure 7-4](#).

Example: 2° W (2003)

International Charts and metric charts 14800 and 14820, only the outer rose is charted, the isogonic lines shall be labeled with the amount and direction of variation, amount and direction of annual change in magenta 8 pt. Swiss Regular. On every fifth line the date shall be shown as well. A label, denoting a shift in the amount or direction of annual change, shall be placed along the isogonic line where the change occurs.

Example: 2° W (1' E) (2003)

**NATIONAL OCEAN SERVICE
Office of Coast Survey
Marine Chart Division**

CARTOGRAPHIC ORDER 007/03

APRIL 18, 2003

FILE WITH NAUTICAL CHART MANUAL, VOLUME 1, PART 2, SECTION 7.4

TO: All Cartographers
Marine Chart Division

SUBJECT: Nomenclature, and Small-Craft

APPLICATION: All Affected Nautical Charts

Effective immediately, the attachment replaces page 7-8.5 through 7-14 in the Nautical Chart Manual, Volume 1, Part 2, Seventh (1992) Edition.

The attachment makes the following changes:

- Revises the name of the section to Nomenclature,
- Provides new guidelines on geographic names (and the Geographic Names Information System), on diacritical marks, and restates the rules on typography,
- Updates the first page of the small-craft chapter to reflect current policies and procedures.

This cartographic order incorporates all pertinent information from the Desk Reference Guide, Unit Code 1964, Nomenclature. All documentation contained therein shall be considered as superseded.

Attachment

Nicholas E. Perugini
Captain, NOAA
Chief, Marine Chart Division

The magnetic variation shall be charted in degrees followed by the letter E or W (east or west) as appropriate. The isogonic line of 0 shall be labeled **NO VARIATION**. The annual change shall be charted in minutes followed by the letter E or W (east or west) as appropriate. The annual change of 0 minutes shall be labeled **NO ANNUAL CHANGE**.

Color and Screening

Isogonic lines shall be charted with magenta.

Feature Removal from Chart

Isogonic lines shall not be removed from the chart without authorization by the Chief, Marine Chart Division.

7.4 Nomenclature

Definition: **NOMENCLATURE**. The system or set of names used in a specific branch of learning or activity. [29]

Definition: **GEOGRAPHIC NAMES**. The term “geographic names” refers to localities, natural features, and man-made waterways. It also applies to certain man-made objects or features such as airports, buildings, parks and tunnels. [29]

Definition: **TYPOGRAPHY**. The style, arrangement, or appearance of matter printed from type. [29]

This section sets forth rules on nomenclature, including geographic names, and typography. It should be noted that, while details on such things as orientation of type, capitalization, and so forth are found below, specific rules regarding type size and style are located in the various other chapters throughout this manual (e.g., information on the type size and style for lights is found in Section [5.3.2, Light Characteristics](#)).

General Requirements

Geographic Names

The Geographic Names Information System (GNIS), a database developed and maintained by the U.S. Geological Survey in cooperation with the U.S. Board on Geographic Names, is the official repository for all Federally recognized physical and cultural geographic names found in the United States. This database, located on the Internet at <http://geonames.usgs.gov/gnishome.html>, shall be considered the authoritative source for geographic names used on all Coast Survey products.

Section 7.4

NAUTICAL CHART MANUAL

Any primary name (i.e., Feature Name) found in the GNIS database can be used as a source for a chart name change, revision, or addition, without the approval of the Chief Geographer. When used as a source for a name change, documentation of the change must be provided for by way of a chart letter. This chart letter shall be created by the Nautical Data Branch from a GNIS query printout, provided to NDB by the cartographer. GNIS names listed as Variant Names shall not be used.

It is the responsibility of the cartographer to determine which names shall or shall not be charted. This determination will be based on the name's importance or usefulness on a particular nautical chart.

New geographic names - names not found in the GNIS but found on new source documents - shall not be charted until they have been referred to the Chief Geographer, researched, and approved by the U.S. Board on Geographic Names.

The Chief Geographer is responsible for the verification of names when questions arise. Discrepancies involving names that are encountered in applying source material to a chart, which are not confirmed by a search of the GNIS or are outside U.S. borders, shall be referred to the Chief Geographer.

Diacritical Marks

Foreign languages often have sounds not found in the English language. In written form, some of these sounds have the appearance of standard letters of the English alphabet, but with special marks above, below, or to the side. These marks are known as diacritical marks. A few examples are the Spanish *tilde*, and the Hawai'ian *ʻokina* and *kohakō* (note, the GNIS may show the *kohakō* with an ö, the correct chart portrayal shall be an o with a line above). When diacritical marks are found on names in the GNIS, they must be included as part of the corresponding name on the chart.

Hawai'ian Geographic Names

Hawai'ian names often include a generic term within the geographic name, e.g. Mokumanu (Bird Island) where *moku* means island, and Maka'alaie (Maka'a Point) where *lae* means point, cape, or headland. Official spellings of Hawai'ian language names are in the GNIS, and shall be charted as shown in that database. However, the official spelling of the name of the state is Hawaii, without a diacritical. In notes, and in other references to the state by official name, the diacritical mark shall not be used. The [Chief Geographer](#) shall be made aware of any discrepancies that may arise.

Translation Tables and Glossaries

The following table shall be placed on each Hawai'ian chart as required by the Chief Geographer. Similar glossaries may be placed at the discretion of or with the permission of the Chief Geographer.

REVISED APRIL 17, 2003

HAWAIIAN - ENGLISH TRANSLATIONS

Hawaiian	English	Hawaiian	English
Akau.....	north	Kowa.....	channel, strait, sound
Awa.....	bay, cove	Lae.....	point, cape
Hana.....	bay	Lua.....	crater, pit
Heiau.....	place of worship, temple	Mauna.....	mountain, hill, peak
Hema.....	south	Moku.....	island, islet, rock
Hikina.....	east	Pali.....	cliff, peak, point
Hono.....	cove, bay	Pohaku.....	rock
Kai.....	sea	Puu.....	mountain, hill(s), peak
Komohana.....	west	Wai.....	water

Abbreviations

Abbreviations of names and terms on charts shall be avoided. It is standard practice, however, to abbreviate names of railroads and the word "Point" when the latter is part of the name of a geographic feature.

When abbreviations are necessary, only those listed in [Chart No. 1](#) shall be used. "*Shl*" for shoal, "*Bk*" for bank, "*Str*" for stream, "*Cr*" for creek, or "*R*" for river shall not be used when space permits charting the full name.

When names of accurately located landmarks must be abbreviated, they are to be charted in caps, e.g., "APT", "HOSP". Standard abbreviations for [landmarks](#) may be used at the discretion of the cartographer.

Charted abbreviations shall not include periods. Periods are used only where needed for clarification, such as for punctuation in notes (exception, months in edition and corrected through dates - see below).

Abbreviations of Calendar Months

Calendar months are expressed on Marine Chart Division nautical products as either numeric values or as alphabetical characters. Alphabetical months are most commonly abbreviated in the titles of [channel tabulations](#), [channel legends](#) and [controlling depth notes](#), while numeric values can be found in the body of channel tabulations.

Except for the month of May, and in edition and corrected through dates, all calendar months shall be abbreviated using the first three alphabetical characters of the respective month, without a period.

Section 7.4

NAUTICAL CHART MANUAL

Capitalization

These rules regarding the capitalization of type shall be observed:

The first letter of single-word labels shall be capitalized, e.g., “*Mud*”, “Tank”, “Marsh”, “*Uncovers*”, “Wooded”.

Only the first letter of the first word in labels of two or more words shall be capitalized, e.g., “Oil tank”, “Densely wooded”, “*Sand and mud*”.

Similarly, only the first letter of the first word or terms referring to action areas shall be capitalized, e.g., “*Being filled*”, “*Proposed fill*”.

Exceptions to these rules are as follows:

All letters in the names of landmarks charted with the [accurate landmark](#) symbol, as well as the names of lights, shall be capitalized, e.g., “TANK”, “STACK”, “RADIO TOWER”, “SKUNK BAY LT”.

All letters in the names of outlined buildings, objects, and features that are known to be conspicuous (e.g., USS NEW JERSEY) shall be capitalized, except on small-scale charts or where space is limited.

Depth legends originating from authoritative source shall be capitalized, e.g., *39 FT DEC 2003*.

The first letters of all words identifying public buildings, parks, etc., shall be capitalized, e.g., “Post Office”, “Municipal Stadium”, “Central Park”.

Unless they are in parenthesis, the first letter of all words in the following terms shall be capitalized, e.g., “See Inset”, “See Extension”, “See Caution”.

The first letter of all words referring to a charted area shall be capitalized, e.g., “*Cable Area*”, “*Danger Area*”, “*Foul Ground*”, “*Tidal Flats*”, “*Prohibited Anchorage*”, “*Dump Site*”, “*Spoil Area*”.

Labels that are enclosed in parentheses shall be in all lowercase letters, e.g., “(snow-capped)”, “(ruin)”, “(marked by beacons)”. An exception would be made if the label referred to a specific note, e.g., “(see note A)”.

Feature Recommendation for a Notice to Mariners

Newly applied, revised or deleted chart nomenclature shall be evaluated for a [Notice to Mariners](#).

REVISED APRIL 17, 2003

Line Type and Weight

None applicable

Location and Orientation**Vertical vs. Italicized Names**

Vertical type is used for names of [topographic features](#) and fixed objects which extend above high water. Italicized (slant) type is used for names of [hydrographic features](#), including names of water areas, underwater features, and floating aids.

Placement of Names

When feasible, names of land features shall be placed in land areas, and those of water features shall be placed in water areas. The name of a feature which covers a considerable area, such as an island or bay, shall be placed approximately in the center of the area.

However, names must not obscure anchorage areas in small bays or detailed hydrography in critical areas. To prevent this, the name of a water feature may be placed on an adjacent land area. A name must not be placed along the axis of the deepest water, nor across a channel, if it can be arranged otherwise. Names shall be placed to appear either entirely on a tinted area or entirely on an untinted area.

Town and city names shall be located near the place named, but should not interfere with other data on the chart.

Orientation of Nomenclature

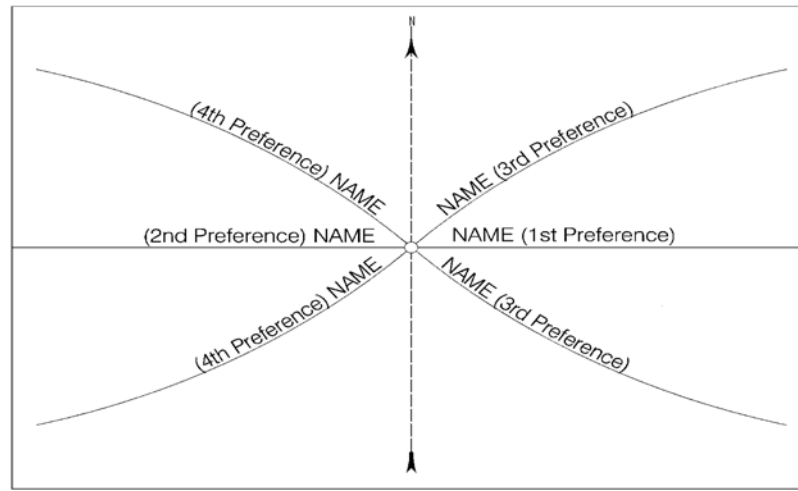
Chart nomenclature is generally oriented parallel to the bottom of the chart. When the axis of a channel is practically straight, the name should be on a line parallel to it. The name of a range should be parallel to the range line.

All terms and all names not parallel with the bottom of the chart, and not following a feature such as a channel or range line, shall be placed on a curve so as to read from the direction of the bottom of the chart. Such names shall be near, and point either to or from, the feature named (see [diagram](#) at the top of the next page).

A curved name is most legible if it begins approximately parallel to the bottom of the chart. Type shall not be curved beyond the vertical. Sharp (v-shaped and u-shaped) curves shall be avoided. Names and terms on nautical charts shall not be placed on double (s-shaped) curves.

Section 7.4

NAUTICAL CHART MANUAL



Size and Shape

Letter Spacing

The letter spacing for charted names and labels shall be done in such a way as to clearly identify the charted feature. Except in cases where names follow a feature of unusual length (e.g., rivers, peninsulas), type shall be placed with an inter-character spacing of zero. When placing type along lengthy features, letters shall be spaced for easy reading. If necessary, the name can be repeated further along the feature.

When two or more words constitute a single name or term, they shall be separated by a single space.

Labels placed on unusually long features shall not be spaced with inter-character distances greater than three times the height of the letters.

Type Size

In determining the size of type to be used for labels and names, the main chart title shall be given the largest size. All other type shall be smaller. Minor names of local importance shall be the smallest type size. The space available on the chart and the relative importance of the feature to which the name or term applies shall also be considered in selecting the size and spacing of the type.

Labels and Notes

Notes on charts shall generally be set at 2 or 3.5 inches in width, though wider notes are permissible. The style, size, and spacing of labels and notes used on nautical charts can be found in the Nautical Chart Manual, Volume Two, Appendix IV.

REVISED APRIL 17, 2003

Color and Screening

All topographic and hydrographic feature names shall be charted in black. See individual specifications for color and screening requirements of all other charted features.

Feature Removal from Chart

Geographic names shall be removed from the chart at the discretion of the cartographer.

(The remainder of this page is intentionally blank.)

7.5 Small-Craft Information

The various types of small-craft charts are listed in [Section 1.3.2, Small-Craft Charts](#). Special information inherent to small-craft charts are [tide tables](#), [marine facility tabulations](#), [weather broadcast information](#), [chart diagrams](#), and [notes](#) designed for the small-craft mariner.

The small-craft chart covers are maintained by the production branches in digital (raster) form and are sent to the Reproduction Branch when photographs are to be inserted in the cover. Tide tables and facility tabulations are updated digitally (by the Center for Operational Oceanographic Products and Services, and NDB respectively) and added to the raster files by the production branches.

1. Marine Facility Tabulations

Small-craft charts include a tabulation of commercial marine facilities that are open to the public within the chart limits and the services available (e.g., marine repair facilities) at each facility. This information is furnished by the marine facilities and is updated by NDB prior to each printing of a small-craft chart and forwarded to the production branches. Military facilities and private facilities not open to the public are charted only with written permission, and only when they will provide services to the public, at least in emergency situations.

A number is assigned to each facility in the tabulation. This number shall be shown in 9 pt. Swiss Regular type style and in magenta and should be placed on land in the vicinity of the facility. A magenta leader will point to the exact facility location.

A Small-Craft Chart Facility Questionnaire, NOAA Form 77-1, is mailed to each charted marine facility by NDB. Information received within the 6 weeks allotted for replies shall be used to revise the new chart edition. Information received later shall be held for a subsequent chart edition. The new information is inserted in the marine facility master file maintained for each chart. The new tabulation is required 12 weeks prior to a scheduled chart printing.

New facility tabulations are examined by the United States Power Squadrons (through the Cooperative Charting Program website - <http://nauticalcharts.noaa.gov/mcd/uspscoop/index.htm>) and by the United States Coast Guard Auxiliary (via NOAA form 77-5). These organizations verify the services listed at existing facilities, and recommend deletion of defunct facilities. A facility shall also be deleted if NOAA Form 77-1 is not returned for a 5-year period and the facility is not listed in the latest edition of a commercial atlas of marine facilities.

2. Tide Tables

Tide table information applicable to the charted area is furnished by [CO-OPS](#). Tide tables are then added to the charts by the production branches. The tide tables selected for charting must cover the entire period until the next expected printing of that chart.

3. USCG Radio Broadcast Note

USCG radio stations are listed on small-craft charts because they broadcast NM information and some stations also broadcast weather forecasts provided by the National Weather Service. NDB will review and prepare a revised listing for the USCG Radio Broadcast note. A review of the existing note should be requested 4 months prior to the scheduled print date so that positive stripper film can be ordered to accommodate direct reproduction. The note will contain the name and call letters of the station, the channel and/or frequency, and the transmission times.

4. Nautical Chart Diagram

Each small-craft chart contains a diagram showing the limits of all nautical charts in the general area of the small-craft chart. These diagrams may be taken directly from existing Nautical Chart Catalogs. The addition of New Charts or the revision of existing chart limits shall be taken from the revised Nautical Chart Catalog.

5. Special Small-Craft Notes

A series of special general information notes have been prepared for small-craft mariners. These notes include information concerning Intracoastal Waterway project depths and aids to navigation, safety hints, abridged rules of the road, etc. If these notes cannot be added within the charting limits they will be placed on the chart cover. Generally, the weather, public boating instruction program, and special

information notes are added to the cover. Notes placed on the cover must be on positive stripper film to accommodate direct reproduction. These notes should be included as space permits, with the Intracoastal Waterway notes receiving first priority on charts of the Intracoastal Waterway.

7.6 Miscellaneous Notes

7.6.1 Corrections Note

As an inducement to chart users to send in information for correcting the nautical charts, the following note will be shown on all charts:

This nautical chart has been designed to promote safe navigation. The National Ocean Service encourages users to submit corrections, additions, or comments for improving this chart to the Chief, Marine Chart Division (N/CS2), National Ocean Service, NOAA, Silver Spring, Maryland 20910-3282.

Section 7.6.1

NAUTICAL CHART MANUAL

The note shall be in black, 7 pt. Swiss Light, set 3 1/2 inches wide. In addition, the note shall be outlined with a .008-inch black border 1/8 inch from the text.

Placement of this note shall be in the following order of preference.

On conventional charts:

1. Lower left margin, 15 mm to the right of the magenta "CAUTION" note;
2. Any prominent location in the lower margin;
3. Top left margin, aligned with the left outside border;
4. Any prominent location in the top margin.

On small-craft route charts:

1. Any prominent location within the chart along the base (bottom) on one side only;
2. Any prominent location within the chart along the top on one side only;
3. Omitted if note cannot be conveniently accommodated.

On folio and book charts, placement shall be in any prominent location on the cover.

7.6.2 KAPP Numbers

KAPP Numbers (not an acronym) shall be added to all nautical charts and navigational "pieces" of charts going forward for printing. Previously published charts incorporating the KAPP numbering system shall be re-examined to ensure that ALL chart pieces have a valid KAPP Number.

To avoid confusion with the reassignment of KAPP Numbers, the current in-place scheme is adopted for immediate use on all charts. Assignment of new KAPP Numbers shall be made by the Chief, Quality Assurance, Plans and Standards Branch in coordination with the Chief, Update Service Branch. A KAPP Number is a unique numeric identifier assigned to each chart or the component "pieces" of a chart (panel, inset, continuation, and extension). This numbering system was originally developed to facilitate the transitional interface between traditional manual compilation and automated chart compilation. Current and projected needs require the reimplementation and formalization of the numbering system.

REVISED JUNE 28, 2002

KAPP Numbers are part of the [Chart History and Plotting Parameters \(CHAPP\)](#) File and are accessed by downloading the current version of the CHAPP file.

The KAPP Number shall be in black 6 pt. SWISS Light. The alphabetic "KAPP" shall be in all capital letters followed by a space and the unique numeric identifier.

Examples: KAPP 1
 KAPP 24
 KAPP 374
 KAPP 1092

The KAPP Number shall be placed following the first edition note for charts not paneled (recentering this note is necessary). For paneled charts, the KAPP Number shall be placed in the upper left corner of all other appropriate bordered pieces of the chart. In all cases, the KAPP Number shall be oriented to the chart baseline, and may be placed either inside or outside the border, whichever is least confusing.

The KAPP Number shall be positioned 2.5 mm after the first edition note, from the panel corner or border.

(The remainder of this page is intentionally blank.)

**NATIONAL OCEAN SERVICE
Office of Coast Survey
Marine Chart Division**

CARTOGRAPHIC ORDER 013/02

August 5, 2002

FILE WITH NAUTICAL CHART MANUAL VOLUME 1, PART 2, SECTION 7.6.3

TO: All Cartographers
Marine Chart Division

SUBJECT: Print-on-Demand Announcement Note

APPLICATION: All New Editions and New Charts with a Print-on-Demand Version Available

Effective immediately, the attachment shall be added to the Nautical Chart Manual, Volume 1, Part 2, Seventh (1992) Edition. A Print-on-Demand Announcement Note shall be added to any New Edition or New Chart that has a Print-on-Demand version available. A listing of charts that are available as Print-on-Demand charts is available at <http://NauticalCharts.gov>. Recreational Charts are not available as Print-on-Demand charts.

Attachment

Nicholas E. Perugini
Captain, NOAA
Chief, Marine Chart Division

7.6.3 Print-on-Demand Announcement Note

A [New Edition](#) of any nautical chart that is available as a Print-on-Demand (POD) chart, or a [New Chart](#) available as a Print-on-Demand chart, shall display a note announcing the availability of a corresponding POD product. The note shall not be shown on charts that are not available as POD charts.

Two versions of the Print-on Demand announcement note are available; a preferred full-length version and a shorter, alternative version, which shall be used only as directed in the following specifications.

7.6.3.1 Preferred Full-Length Version of the Print-on-Demand Announcement Note

The following note shall be charted on New Editions of any chart available as a POD chart, or on any New Chart available as a POD chart:

PRINT-ON-DEMAND CHARTS

NOAA and its partner, OceanGrafix, offer this chart updated weekly by NOAA for Notices to Mariners and critical corrections. Charts are printed when ordered using Print-on-Demand technology. New Editions are available 5-8 weeks before their release as traditional NOAA charts. Ask your chart agent about Print-on-Demand charts or contact NOAA at 1-800-584-4683, <http://NauticalCharts.gov>, help@NauticalCharts.gov, or OceanGrafix at 1-877-56CHART, <http://OceanGrafix.com>, or help@OceanGrafix.com.

The note shall print in black, 7 point Swiss Light style type, set 4 1/2" or 2 1/2" wide, depending on available space.

Placement on [Conventional Charts](#):

First Preference- In the lower margin.

Second Preference- In the upper margin.

Third Preference- Inside the neatline. Under no circumstances shall [hydrography](#) or important [topography](#) be deleted to accommodate this note.

Fourth Preference- Use the shorter alternative version of the note. See [Section 7.6.3.2](#).

Placement on [Small-Craft](#) Folio Charts:

First Preference- Anywhere on the back cover.

Second Preference- A prominent available space on the inside of the cover.

Section 7.6.3.1

NAUTICAL CHART MANUAL

Third Preference- Inside the neatline on Page B. Under no circumstances shall [hydrography](#) or important [topography](#) be deleted to accommodate this note.

Fourth Preference- Inside the neatline on any page other than Page B. Under no circumstances shall hydrography or important topography be deleted to accommodate this note.

Fifth Preference- Use the shorter alternative version of the note. See [Section 7.6.3.2](#).

Placement on [Small-Craft](#) Pocket Fold Charts:

First Preference- Anywhere outside the neatline on Side B.

Second Preference- Anywhere outside the neatline on Side A.

Third Preference- Inside the neatline on Side B. Under no circumstances shall hydrography or important topography be deleted to accommodate this note.

Fourth Preference- Inside the neatline on Side A. Under no circumstances shall hydrography or important topography be deleted to accommodate this note.

Fifth Preference- Use the shorter alternative version of the note. See Section 7.6.3.2.

7.6.3.2 Shorter Alternative Version of the Print-on-Demand Announcement Note

When the preferred full-length Print-on-Demand Announcement Note is too large for any of the approved placement options, a shorter alternative version of the note shall be used. The alternative version of the note is as follows:

PRINT-ON-DEMAND CHARTS

This chart is available in a version updated weekly by NOAA for Notices to Mariners and critical corrections. Charts are printed when ordered using Print-on-Demand technology. New Editions are available 5-8 weeks before their release as traditional NOAA charts. Ask your chart agent about Print-on-Demand charts.

The note shall print in black, 7 point Swiss Light style type, set 4 1/2" or 2 1/2" wide, depending on available space.

ADDED AUGUST 5, 2002

Placement on [Conventional Charts](#):

First Preference- In the lower margin.

Second Preference- In the upper margin.

Third Preference- Inside the neatline. Under no circumstances shall [hydrography](#) or important [topography](#) be deleted to accommodate this note.

Fourth Preference- A Print-on-Demand Announcement Note shall not be charted if none of the preceding preferences can be accommodated.

Placement on [Small-Craft](#) Folio Charts:

First Preference- Anywhere on the back cover.

Second Preference- A prominent available space on the inside of the cover.

Third Preference- Inside the neatline on Page B. Under no circumstances shall hydrography or important topography be deleted to accommodate this note.

Fourth Preference- Inside the neatline on any page other than Page B. Under no circumstances shall hydrography or important topography be deleted to accommodate this note.

Fifth Preference- A Print-on-Demand Announcement Note shall not be charted if none of the preceding preferences can be accommodated.

Placement on Small-Craft Pocket Fold Charts:

First Preference- Anywhere outside the neatline on Side B.

Second Preference- Anywhere outside the neatline on Side A.

Third Preference- Inside the neatline on Side B. Under no circumstances shall hydrography or important topography be deleted to accommodate this note.

Fourth Preference- Inside the neatline on Side A. Under no circumstances shall hydrography or important topography be deleted to accommodate this note.

Fifth Preference- A Print-on-Demand Announcement Note shall not be charted if none of the preceding preferences can be accommodated.